

DETAILED ACTION

Election/Restrictions

This application contains claims 2-4, 11-15, 17-20, 23-25, 27-28, and 31-34 are drawn to an invention nonelected with traverse in the reply filed on July 14, 2009. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5, 7-10, 21, 29, and 35 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 4110132 to Parikh.

Parikh discloses the features including the claimed Cu-Zn alloy composition (col. 2, line 60 to col. 3, line 25) and grains size (col. 2, lines 26-44). The recited refined grains read on grain of Parikh since claimed grain size range is overlapped by grain size of Parikh's Cu-Zn alloy. Parikh does not disclose the phases, ratios of elements, and dendrites shapes. But, since instant Cu-Zn alloy is formed by casting. Said properties would have been inherently possessed by cast alloys. Therefore, when prior art compounds essentially "bracketing" the claimed compounds in structural similarity are all known, one of ordinary skill in the art would clearly be motivated to make those claimed compounds in searching for new products in the expectation that compounds similar in structure will have similar properties. In re Harris, 409 F.3d at 1341, In re Gyurik, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979); See In re May, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) and In re Hoch, 57 CCPA 1292, 1296, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (1970). As stated in In re Peterson, 315 F.3d 1325, 1329-30, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003), that "A prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art". Therefore, it would have been obvious to one of ordinary skill in the art to select any portion of range, including the claimed range, from the broader range (Ex parte Fu, 2008 WL 867826 (BPAI 2008) disclosed in a prior art

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reference because the prior art reference finds that the prior art composition in the entire disclosed range has a suitable utility. Also see MPEP § 2131.03 and § 2123.

Claims 6, 16, 22, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parikh as applied to claims above, and further in view of USP 4826736 to Nakamura et al.

Parikh discloses the features substantially as claimed as set forth in the rejection above except for Pb, Se, Bi, and/or Te. However, Nakamura teaches said elements in the same field of endeavor or the analogous metallurgical art. It has been held that combining known ingredient having known functions, to provide a composition having the additive effect of each of the known functions is within realm of performance of ordinary skill artisan. In re Castner, 186 USPQ 213 (217). The use of conventional materials to perform their known functions in a conventional process is obvious. In re Raner, 134 USPQ 343 (CCPA 1962).

As pointed out by the court, In re Kerkhoven 205 USPQ 1069, "It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose." Cites In re Susi 169 USPQ 423, 426 (CCPA 1971); In re Crockett 126 USPQ 186, 188 (CCPA 1986).

Response to Arguments

Applicant's arguments filed January 15, 2010 have been fully considered but they are not persuasive.

For example, neither Parikh '132 nor Nakamura '736, alone or in combination, shows or suggest the limitation of "wherein grains of the copper-based alloy casting are refined during melt-solidification, and mean grain size of the refined grains after the melt-solidification is 100 μm or less, and wherein α , ϵ and γ -phases of the copper-based alloy casting occupy more than 80% of phase structure of the copper-based alloy casting" as

Applicant argues that " recited in independent claim 1.

" But,

Parikh discloses the features including the claimed Cu-Zn alloy composition (col. 2, line 60 to col. 3, line 25) and grains size (col. 2, lines 26-44). The recited refined grains read on grains of Parikh since claimed grain size range is overlapped by grain size of Parikh's Cu-Zn alloy. Parikh does not disclose the phases and ratios of phase structure properties. But, since instant Cu-Zn alloy is formed by casting. Said properties would have been inherently possessed by cast alloys. Therefore, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Applicant's argument in paragraph bridging pages 12-13 of instant remarks is noted. Examiner reiterates the same reasons and case laws in the rejection.

Applicant's argument in page 14, first full paragraph of instant remarks is noted. But, applicant failed to show by factual evidence that claimed composition is critical and possesses unexpected. Since claimed casting step, alloy composition, and grain size are overlapped by alloy Parikht, the burden is on the applicant to prove that the product of the prior art does not necessarily or inherently possess characteristics attributed to the claimed product. In re Spade, 911 F.2d 705, 708, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

~~However, there are the only deficiencies in the disclosure of Parikh 132. Parikh 132 does not teach, or suggest, (i) "wherein grains of the copper-based alloy casting are refined during melt-solidification, and mean grain size of the refined grains after the melt-~~

Applicant argues that " solidification is 100 µm or less" as recited in claim 1. " But,

Parikh discloses the features including the claimed Cu-Zn alloy composition (col. 2, line 60 to col. 3, line 25) and grains size (col. 2, lines 26-44). The recited refined grains read on grains of Parikh since claimed grain size range is overlapped by grain size of Parikh's Cu-Zn alloy.

Applicant's argument in page 15 of instant remarks is noted. First, applicant failed to show claimed alloy composition is critical for recited properties. Second, instant claims are product claims. The invention defined in a product-by-process claim is a product, not a process. In re Bridgeford, 357 F. 2d 679, 149 USPQ 55 (CCPA 1966) and MPEP § 2113. It is the patentability of the product claimed and not of the recited process steps which must be established. Third, applicant failed to show cast phase structures and their proportions would destroyed by further processing of Parikh.

Applicant's argument in page 16, first full paragraph of instant remarks is noted. But, P/Zr preferable range is not critical. In re Goffe, 191 USPQ 429 (CCPA 1976).

Applicant's argument of unexpected result in page 17 of instant remarks is noted. First, unexpected results must be established by factual evidence. Attorney's arguments do not take the place of evidence in the record. In re Pearson, 494 F.2d 1399, 1405 (CCPA 1974). Mere argument or conclusory statements in the specification is not sufficient. In re Geisler (CA FC) 43 USPQ2d 1362 (7/7/1997) and Ex parte Gelles, 22 USPQ2d, 1318. Unexpected results have not been shown by the page 4,

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[0016] of instant specification and ASM Metals Handbook (aluminum alloy vs. instant copper-zinc alloy) because which fail to compare the claimed subject matter with the closest prior art. In re Burckel, 201 USPQ 67, In re Baxter Travenol Labs., 952 F.2d 388, 392, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991), and In re De Blauwe, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984). **Comparison must be done under identical condition except for the novel features of the invention.** In re Brown, 173 USPQ 685 and In re Chapman, 148 USPQ 711. **The showing of unexpected results must be occurred over the entire claimed range.** In re Clemens, 622 F.2d 1029, 206 USPQ 289, 296 (CCPA 1980). The scope of the showing must be commensurate with the scope of the claims. MPEP § 716.02(d), In re Tiffin, 448 F.2d 791, 792 (Fed. Cir. 1971), In re Coleman, 205 USPQ 1172, In re Grasselli, 713 F.2d 731, 743, 218 USPQ 769, 778 (Fed. Cir. 1983), and In re Greenfield, 197 USPQ 227.

Since Parikh '132 discloses a copper base alloy that may contain more than 10
optional elements, excessive and undue experiments would be required for one having

Applicant argues that “ ordinary skill in the art to select adequate elements and portions thereof. ”

But, applicant's argument is found immaterial because instant transitional expression “comprising” is inclusive and fails to exclude unrecited ingredients even in major amounts. See Ex parte Davis et al. (POBA 1948) 80 USPQ 448 and In re Bertsch 132 F2d 1014, 56 USPQ 379 (CCPA 1942).

Applicant's argument with respect to Nakamura is noted. But, Nakamura teaches Cu-Zn alloy.

Applicant's argument in page 20, first paragraph of instant remarks is noted. But, Nakamura is cited merely for known elements in Cu-Zn alloys.

Applicant's arguments in pages 20-22 of instant remarks are noted. Examiner reiterates the same responses above to the same arguments.

Applicant's argument in page 22 of instant remarks is noted. But, examiner reiterates the same reasons and case laws as set forth in the rejection above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The above rejection relies on the reference(s) for all the teachings expressed in the text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121; 37 C.F.R. Part §41.37 (c)(1)(v); MPEP §714.02; and MPEP §2411.01(B).

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Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Thursday from 5:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sikyin Ip/

Primary Examiner, Art Unit 1793

March 27, 2010